

A REVIEW OF THE MEXICAN AND CENTRAL AMERICAN
SPECIES OF *COLOBOTHEA* SERVILLE
(COLEOPTERA: CERAMBYCIDAE)

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ABSTRACT

The Mexican and Central American species of the lamiine genus *Colobothea* are reviewed. The known species are characterized and distribution given. Four new species are described: *Colobothea sinaloensis* (Mexico); *C. rincona* (Costa Rica); *C. chemsaki* (Mexico to Costa Rica); and *C. hondurena* (Honduras). *C. fasciatipennis* Linsley is given full species status. A key to the Mexican and Central American species of the genus is provided.

Since the descriptions by Bates (1865, 1872, 1881, 1885), Pascoe (1866), and Casey (1913) of new Mexican and Central American species of *Colobothea*, the only addition to our knowledge of this group has been Linsley's (1935) description of a subspecies from Panama. The genus has been given considerably more attention in Brasil by the late Dmytro Zajciw.

Colobothea is primarily South American in distribution as noted by Zajciw (1966), and Gilmour (1965) listed 111 species in the genus, only 15 of which were known from the area of this study. Miguel Monné (pers. comm.), working in Brasil, has as many as 50 undescribed species of what is presently defined as *Colobothea* from South America. This study, while acknowledging the probable occurrence of Colombian and Venezuelan species in Panama, is intended to deal only with that portion of the genus which is Mexican and Central American in distribution.

Specimens of *Colobothea* are not particularly scarce in collections, and more than 900 have been examined in this study; in addition, the Casey types at the USNM and dorsal photographs of the types were examined.

Individuals of *Colobothea* are found both nocturnally and diurnally, on dead or dying trunks and branches of hardwood trees. Field observations by me indicate a high level of crepuscular activity. No specimens seen were recorded as attracted to lights, and specific hosts have seldom been recorded.

The flight period as shown by label data on available specimens is predominantly during the early part of the rainy season. Nearly 90% of the examples were collected from May through July, with a scattering of dates throughout the rest of the year. This may be partially the result of the increased number of collectors in the field during the summer months, but the onset of the rainy season would still appear to trigger the majority of adult emergences.

There is in many species a pronounced modification of the male secondary sexual characters, consisting of variations in the form of the terminal abdominal sternite (Figs. 18-32). Male internal structures, consisting of tufted parameres and sheath, are usually incompletely withdrawn, and although shown in the figures, will not be used as determining characters.

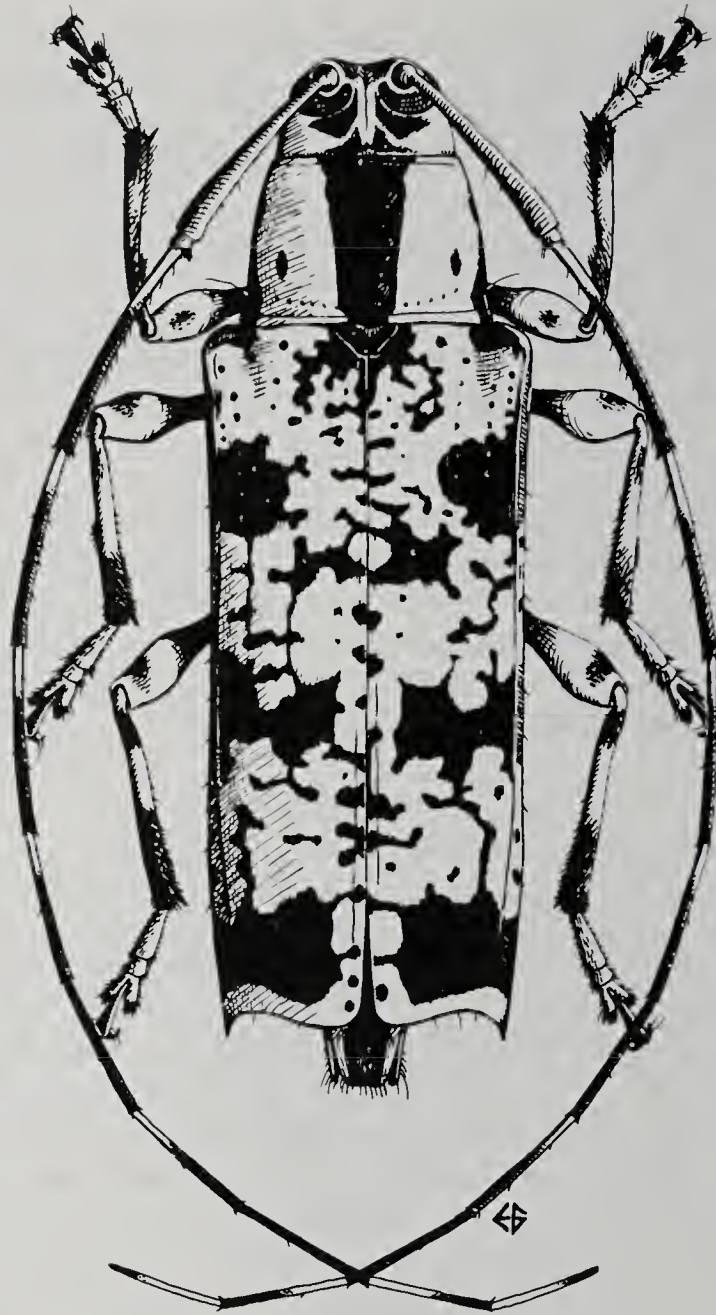


Fig. 1, *Colobothea chemsaki* Giesbert, female.

Genus *COLOBOTHEA* Serville

Colobothea Serville, 1825, *Encycl. Méth. Ins.*, X, p. 336; 1835, *Ann. Soc. Ent. Fr.*, 4:69; Bates, 1865, *Ann. Mag. Nat. Hist.* (3)XV, p. 214; Bates, 1881, *Biologia Centrali-Americana, Coleoptera* 5:187.

Form moderate sized, somewhat elongate, laterally compressed, with patterns of light and dark markings composed of fine short pubescence. Head with palpi short, subequal; frons longer than wide, vertical; eyes moderately large, finely faceted, deeply emarginate, upper lobes smaller than lower; antennae filiform, longer than body, 11 segmented, scape elongate, slender, widest at apex, third segment usually slightly longer than scape, intermediate segments with scattered short black setae. Pronotum unarmed, convex, widest at base or behind middle, punctures mostly limited to transverse row near base, often in a shallow subbasal sulcus. Elytra widest across humeri which are somewhat elevated and obliquely rounded; sides vertical on basal half, deflexed, more or less straight, carinate above from humeri to well beyond middle; apices emarginate, sinuate, or truncate, with outer angles spinose; surface with coarse punctures bearing stiff suberect dark setae. Body beneath with prosternal process usually less than $\frac{1}{4}$ as wide as procoxal cavity (broader in *C. distincta*), expanded at apex; procoxal cavities closed behind; procoxae globose; mesosternal process wide, narrower at apex; male terminal sternite often modified. Legs

with fore- and mesotibiae notched, carinae absent; males with femora moderately clavate, foretarsi often fringed, females with femora more slender, foretarsi without fringe; claws divaricate.

Type species: *Saperda cassandra* Dalman (Thomson designation, 1864).

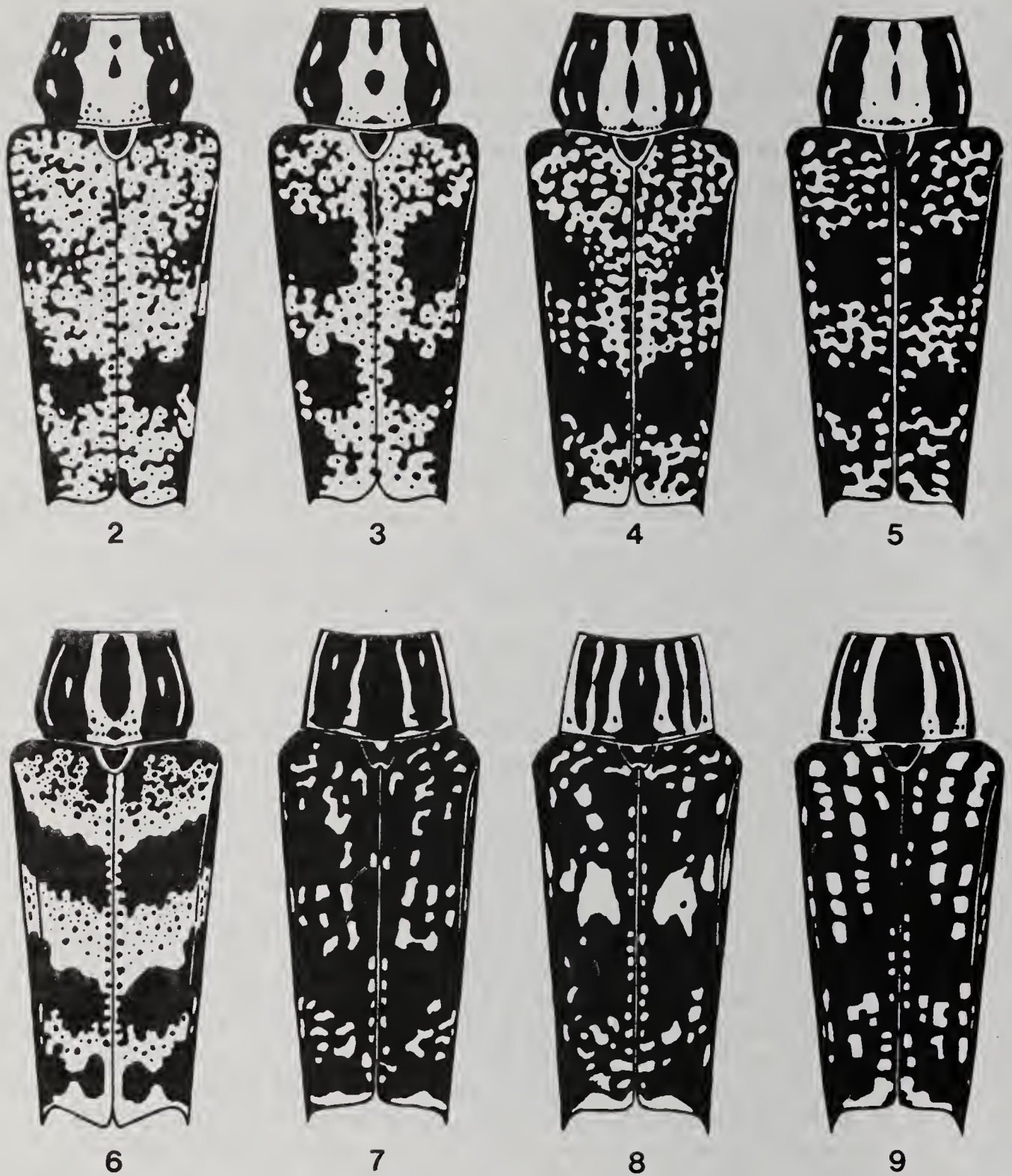
This genus may be distinguished from others in its tribe by the laterally compressed body; the elytra with vertical sides carinate above, and lacking tubercles or crests, with spinose outer apical angles; the unarmed pronotum; the female abdomen not lengthened to form a sheath for the ovipositor; and by the filiform 11 segmented antennae with slender obconical scape. The above description is based on the Mexican and Central American species.

KEY TO THE MEXICAN AND CENTRAL AMERICAN SPECIES
OF THE GENUS *Colobothea*

1. Dorsal pubescent pattern consisting of more than one pale color on a dark background 2.
- 1'. Dorsal pubescent pattern consisting of a single pale color on a dark background, with no more than a slight infuscation of another pale color 3.
- 2(1). Form small (9-12mm), dorsal surface of pronotum and elytra with varied markings of dark brown, pale brown, and yellowish. Antennae distinctly less than 1½ times as long as body. Prosternal process more than ½ as wide as procoxal cavity. Southern Mexico to Colombia *C. distincta*.
- 2'. Form large (16-23mm), dorsal surface of pronotum and elytra marked with dull orange lines and spots, and white maculae. Antennae at least 1½ times as long as body, with a broad white annula on sixth segment of both sexes, seventh segment apically produced in male. Prosternal process less than ¼ as wide as procoxal cavity. Nicaragua to Colombia *C. bitincta*.
- 3(1'). Pronotum with discal pattern of pale lines, spots, or lineoles, or with a wide whitish central vitta 4.
- 3'. Pronotum dull ochraceous with a broad central discal vitta and small oblong spot on each side dark as in Fig. 1. Elytra marked with dull ochraceous. Southern Mexico to Costa Rica *C. chemsaki*.
- 4(3). Pronotum with broad whitish vitta on center, narrowly interrupted by spots or lines of dark in center of vitta as in Figs. 2-5..... 5.
- 4'. Pronotum with discal pattern of narrow pale lines and spots as in Figs. 6-17..... 8.
- 5(4). Eye with lower lobe subequal in height to gena in male, distinctly shorter than gena in female, narrower than frons in both sexes. Terminal sternite of male bifid as in Fig. 18. Pacific slope of Mexico from Sinaloa to Jalisco.....
..... *C. sinaloensis*.
- 5'. Eye with lower lobe distinctly taller than gena in male, subequal to gena in female. Terminal sternite of male not as in Fig. 18 6.
- 6(5'). Eye with lower lobe 3 to 4 times as tall as gena, wider than frons in male. Terminal sternite of male as in Fig. 27. Ter-

- minal tergite of female emarginate. Southern Mexico to Guatemala *C. guatemalena*.
 6'. Eye with lower lobe at most 2½ times as tall as gena, subequal to frons in male. Terminal sternite of male not as in Fig. 27. Terminal tergite of female truncate or notched 7.
 7(6'). Terminal sternite of male as in Fig. 19. Terminal tergite of female notched. Elytral apices sinuate-truncate. Southern Mexico to Nicaragua *C. ramosa*.
 7'. Terminal sternite of male produced as a pair of spatulate processes as in Fig. 20. Terminal tergite of female truncate. Elytral apices truncate. Southern Mexico from Veracruz to Chiapas *C. leucophaea*.
 8(4'). Elytra with whitish transverse pattern coalesced and clearly delimited as in Fig. 6. Elytral apices oblique, slanting anteriorly from suture. Terminal sternite of male deeply, widely incised as in Fig. 22. Terminal tergite of female deeply notched. Mexico *C. regularis*.
 8'. Elytra with whitish pattern of scattered spots and maculae, apices not as above. Abdomen with terminal segments not as above 9.
 9(8'). Head with a single white line on vertex between eyes 10.
 9'. Head with a pair of white lines on vertex between eyes 11.
 10(9). Pronotal disc with 4 longitudinal vittae, 2 near midline, 1 near each lateral border. Elytra with all spots and maculae small (Fig. 7). Nicaragua to Panama *C. unilineata*.
 10'. Pronotum with 6 or 8 longitudinal vittae. Elytra each with a large irregular white macula behind middle (Fig. 8). Panama *C. fasciatipennis*.
 11(9'). Pronotum with 4 subparallel entire longitudinal white vittae, central pair widely separated at base as in Fig. 9. Terminal sternite of male as in Fig. 21. Nicaragua to Colombia *C. dispersa*.
 11'. Pronotum with central pair of vittae, if present, connected or approximate at base. Terminal sternite of male not as above 12.
 12(11'). Pronotum with a more or less entire longitudinal whitish vitta on each side of midline; central vitta, if present, basal; lateral stripes not visible from above (Figs. 10-13). Elytral markings sometimes merged to form large maculae 13.
 12'. Pronotum marked with abbreviated lines and spots on disc; lateral stripes visible from above; central vitta, if present, apical (Figs. 14-17). Elytral markings not merged to form larger maculae 17.
 13(12). Pronotum with paired discal vittae as in Fig. 10, not enclosing other markings in center. Terminal sternite of male as in Fig. 23. Mexico to Honduras *C. parcens*.
 13'. Pronotum with paired discal vittae usually enclosing a short central lineole, at least basally, as in Figs. 11-13. Terminal sternite of male not as in Fig. 23 14.
 14(13'). Elytra with pattern of nearly equal-sized markings in 3 ill-defined transverse areas as in Fig. 11. Scutellum white

- laterally. Terminal sternite of male as in Fig. 24. Mexico to Honduras..... *C. vidua*.
- 14'. Elytra with markings of postmedian transverse area distinctly larger than other elytral markings, or containing large maculae. Scutellum white tipped or with entire margin white..... 15.
- 15(14'). Elytra each marked with a large oblong macula behind middle, and a round macula near inner apical angle, in addition to the smaller markings, as in Fig. 13. Scutellum with entire margin white. Terminal sternite of male not as in Fig. 28. Terminal tergite of female white laterally 16.
- 15'. Elytral markings as in Fig. 12, not coalescing into large rounded maculae. Scutellum white at apex. Terminal sternite of male as in Fig. 28. Terminal tergite of female with white vitta on middle. Southern Mexico to Honduras.....
..... *C. sexualis*.
- 16(15). Abdomen of male with terminal sternite moderately produced at sides as in Fig. 25. Southern Mexico to Costa Rica....
..... *C. chontalensis*.
- 16'. Abdomen of male with terminal sternite more truncated as in Fig. 26. Costa Rica to Panama *C. pleuralis*.
- 17(12'). Pronotum with basal paired white markings separated by less than 1/3 of basal width of pronotum as in Figs. 14 and 15 18.
- 17'. Pronotum with basal paired white markings separated by about 1/3 of basal width of pronotum as in Figs. 16 and 17 19.
- 18(17). Eye with lower lobe nearly twice as tall as gena in male, distinctly taller than gena and wider than frons in female. Elytra lacking white lineoles just behind scutellum on suture. Abdomen of male with terminal sternite rounded apically as in Fig. 30. Costa Rica *C. rincona*.
- 18'. Eye with lower lobe slightly taller than gena in male, subequal to or shorter than gena and wider than frons in female. Elytra with white sutural lineoles just behind scutellum. Abdomen of male with terminal sternite emarginate as in Fig. 29. Nicaragua to Venezuela *C. aleata*.
- 19(17'). Form moderately large (10-19mm). Integument piceous with smaller white pubescent markings as in Fig. 16. Eye of male with lower lobe subequal in width to frons. Abdomen of male with fourth sternite lacking punctate and setose area in middle; terminal sternite elongate, unimpressed, tapering, apically emarginate as in Fig. 29. Terminal tergite of female rounded to subtruncate with at most a slight apical incision, white pubescent laterally. Mexico to Nicaragua *C. hebraica*.
- 19'. Form smaller (8.5-13mm). Integument dark brown to piceous with slightly ochraceous whitish markings larger sized as in Fig. 17. Eye of male with lower lobe wider than frons. Abdomen of male with fourth sternite punctate and setose medially; terminal sternite short, thick, widely impressed in middle, setose, apex emarginate as in Fig. 31. Terminal tergite of female incised and impressed apically, evenly pubescent. Honduras *C. hondurena*.



Figs. 2-9, Typical elytral and pronotal patterns of: 2, *Colobothea sina-loensis* Giesbert; 3, *C. ramosa* Bates; 4, *C. leucophaea* Bates; 5, *C. guatemala-lena* Bates; 6, *C. regularis* Bates; 7, *C. unilineata* Bates; 8, *C. fasciatipennis* Linsley; 9, *C. dispersa* Bates.

COLOBOTHEA DISTINCTA Pascoe

Colobothea distincta Pascoe, 1866, Trans. Ent. Soc. Lond. (3)5:284; Bates, 1872, Trans. Ent. Soc. Lond. 1872:226; Bates, 1881, Biologia Centrali-Americana, Coleoptera 5:189, pl. 14, Fig. 16; *ibid.*, 1885:420.

MALE. Form moderately robust, convex, integument dark reddish brown, variable pattern of pale brown, yellowish white, and dark brown pubescence. Head with lower lobe of eye slightly taller than gena, much narrower than frons; brown pubescent, with yellowish around eyes and frontal margins, and a more or less divided longitudinal yellowish white line on vertex between eyes; antennae less than $1\frac{1}{2}$ times as long as body, terminal segment $\frac{1}{4}$ as long as third segment, segments whitish

annulate at bases, with annulae reduced or absent on segments 7 and 9. Pronotum convex, widest at base, tapering somewhat to apex; short dark brown pubescent, widely and irregularly interrupted in middle of disc from base to apex with pale brown, which in turn is variably marked with spots and lineoles of dark brown and infuscated with yellowish white at margins, with a wide longitudinal yellowish white stripe on either side laterally from base to apex; remaining dark brown area variably marked with spots or lineoles of yellowish white on apical half; prosternal process more than half as wide as procoxal cavity. Scutellum slightly notched apically, variably clothed with dark brown, usually yellowish white centro-basally. Elytra less than twice as long as width across slightly elevated humeri, sides nearly straight, tapering, apices sinuate-truncate, outer angles spinose; clothed with mixture of pale and dark brown pubescence, with yellowish white markings as follows: a large postmedian transverse posteriorly angulate and undulating fascia, sometimes broken, on each elytron not reaching suture or margin, widely outlined with dark brown; smaller irregular maculae in humeral area, longitudinally behind scutellum on suture, an indistinct line from side at basal $1/5$ angled back toward but not reaching suture, near suture at apical $1/6$, and above apical spine; short dark brown vitta on suture immediately behind postscutellar yellowish white marking, and a scattering of small brown spots along suture. Body beneath clothed with yellowish white recumbent pubescence except on terminal sternite, remaining sternites medially and laterally and a small round spot on metepisternum brown; terminal sternite twice as long as fourth, tapering to widely emarginate apex which is margined at sides with white. Legs with foretarsi unfringed. Length 9-11 mm.

FEMALE. Slightly more robust than male, legs somewhat shorter and more slender; antennae slightly longer than body; lower lobe of eye subequal to gena in height, narrower than frons. Abdomen with terminal sternite $2\frac{1}{2}$ times as long as fourth, tapering to emarginate apex, which is dentate at hind angles and much narrower than that of male. Length 10-12mm.

TYPE-LOCALITY: Santa Marta, Colombia.

RANGE: Chiapas, Mexico to Colombia.

REMARKS: The wider prosternal process in both sexes, shorter antennae particularly in the male, and the dorsal pattern, with three colors of pubescence and a large undulating postmedian yellowish white fascia on each side will serve to separate this species. Specimens from northern Honduras have the postmedian fascia divided into a pair of maculae on each elytron.

COLOBOTHEA BITINCTA Bates

Colobothea bitincta Bates, 1872, Trans. Ent. Soc. Lond., 1872:226; Bates, 1881, Biologia Centrali-Americana, Coleoptera 5:189, pl. 14, Fig. 17; Chemsak & Linsley, 1970, Jour. Kansas Ent. Soc., 43:409 (lectotype).

MALE. Form moderately large, nearly parallel sided, integument dark brown, clothed with minute brown vestiture, stripes and spots of dull orange, and white maculae. Head with dull orange pubescence concentrated at margins of frons, extending as a longitudinal line from bottom of lower eye lobe to occiput, and at middle of vertex as a line to occiput; lower lobe of eye subequal in height to gena and in width to frons; antennae less than twice length of body, piceous, segments 3 and 4 whitish at base, sixth segment thickly white pubescent on basal $2/3$ with a small swelling on underside at apex, seventh segment with knob on underside at apex. Pronotum convex, nearly as wide at base as elytra across humeri, tapering to apex, marked with 6 subequally spaced longitudinal dull orange lines from base to apex, 4 on disc and one on each side laterally. Scutellum dark brown, slightly notched at apex. Elytra more than twice as long as width across somewhat elevated humeri, sides straight, slightly tapering to widely shallowly emarginate apices which are stoutly spined at outer angles; marked with scattered small maculae of dull orange pubescence and 2 whitish irregular or broken transverse short fasciae on each elytron behind middle, apical emarginations fringed with white. Body beneath with dull

orange and white spots laterally; abdomen with terminal sternite $2\frac{1}{2}$ times as long as fourth sternite, tapering to widely triangularly emarginate apex which is slightly concave in center and fringed laterally with white; terminal tergite rounded, emarginate at apex. Legs with foretarsi broadly fringed. Length 16-21mm.

FEMALE. Legs shorter and more slender than those of male, foretarsi without fringe; antennae about $1\frac{1}{2}$ times as long as body, with apices of segments 6 and 7 simple; abdomen with terminal sternite more than 3 times as long as fourth sternite, tapering, apex emarginate and narrower than that of male, dentate at outer angles. Length 18-23mm.

TYPE-LOCALITY: Chontales, Nicaragua.

RANGE: Nicaragua to Colombia.

REMARKS: The large size, distinctive pattern of dull orange and white markings, thick white pubescence on the sixth antennal segment of both sexes, and the apical knob on the seventh antennal segment of the male will distinguish this species.

COLOBOTHEA CHEMSAKI Giesbert, **new species**

(Fig. 1)

MALE. Form moderately robust, nearly parallel sided, laterally compressed, posteriorly sloping, sides deflexed, integument dark brown, clothed with minute dark brown vestiture, scattered suberect dark setae, and heavy pattern of dull greyish ochraceous pubescence, infuscated at elytral apex and on legs with small amounts of white. Head clothed on front and vertex with dull ochraceous, two triangular dark maculae on vertex, one behind each eye; lower lobe of eye slightly taller than gena, narrower than frons; antennae dark reddish brown, more than $1\frac{1}{2}$ times as long as body, scape dull ochraceous pubescent, bases of segments 3 to 6, and 8 to 10 with irregular white annulae, eleventh segment white on basal $\frac{2}{3}$. Pronotum wider at base than long, sides nearly straight, tapering moderately to apex; punctation mostly limited to a slightly curved subbasal transverse row; clothed with dull ochraceous recumbent pubescence, marked with a wide blackish brown pubescent vitta from base widening slightly to apex, and a small oval spot of blackish brown behind middle on each side; sides with dark vittae from base to apex. Scutellum dark brown, with dull ochraceous pubescence at middle of base, and sometimes at apex. Elytra twice as long as width across slightly elevated humeri, parallel sided with slight narrowing just before apices; sides tall, defined above by double carinae from humeri nearly to apices, which are sinuate-truncate with outer angles spinose; sparsely, moderately coarsely punctate, punctures bearing erect dark setae; dull ochraceous pubescent, varied with spots of dark brown and broken by larger dark brown macular areas on disc near scutellum, on humeri, on each elytron at outer half of basal quarter, a postmedian sinuate transverse macula not connected to suture, and a large macula just before apex touching margin but not suture; apices with dull ochraceous sinuate fascia on hind margin infuscated at sutural angle with white. Body beneath yellowish and white pubescent; abdomen widely marked on center and maculate at sides with dark brown; terminal sternite wider than long, twice length of fourth sternite, widely emarginate, dark brown with white maculae laterally at apex; terminal tergite shorter and narrower than sternite, slightly emarginate at apex, white pubescent at sides. Legs with femora yellowish and white pubescent, dark maculae just before apices; tibiae widely annulate in middle with white and yellowish; tarsi white pubescent, dark at apices, foretarsi fringed. Length 12-18mm.

FEMALE. Antennae less than $1\frac{1}{2}$ times as long as body. Legs more slender and shorter than those of male. Abdomen with terminal sternite nearly as long as basal width, $2\frac{1}{2}$ times as long as fourth sternite, emarginate, hind angles dentate; terminal tergite rounded at apex with shallow emargination. Length 10.5-17.5mm.

Holotype male, allotype (California Academy of Sciences), and 47 paratypes (17 males, 30 females) from HONDURAS, Dept. Yoro, 45km. S Tela, 800m altitude, on *Lonchocarpus* sp., 25-27-V-78 (E. Giesbert). (5 males, 6 females from same location, not named as paratypes because of condition). 4 additional paratypes include: 1 male,

MEXICO, Oaxaca, Donaji, 17-IV-53 (R. C. Bechtel & E. I. Schlinger); 2 females, COSTA RICA, Cartago, Turrialba, 29-31-V-74 (E. Giesbert); 1 female, COSTA RICA, Alajuela, Zapote de Upala (vic. Bijagua), 18-III-73 (E. Rodriquez).

REMARKS: This species appears to be more closely related to several South American species than to any of its congeners in Mexico or Central America, and can easily be separated from other species in this study by its dull ochraceous and dark brown color pattern. Two of the Honduran specimens have a small oblong ochraceous spot behind the center of the pronotal disc, but are otherwise identical. The author is pleased to dedicate this species to John A. Chemsak in recognition of his indispensable help and encouragement in the field of taxonomy.

COLOBOTHEA SINALOENSIS Giesbert, **new species**
(Figs. 2, 18)

MALE. Form moderately robust, convex, subcuneate, sides deflexed, integument dark reddish brown, clothed with minute dark brown vestiture, scattered erect dark setae, and with heavy markings of dull whitish pubescence. Head finely punctate, with dull whitish pubescence which is limited on vertex to a pair of posteriorly divergent vittae between the eyes; lower lobe of eye as tall as gena, narrower than frons; antennae nearly twice as long as body, dark reddish brown, with ill-defined whitish annulae on bases of segments 3 to 11. Pronotum convex, widest behind middle, narrowed at base; pubescence dark brown, with a large plaga of dull whitish from base to apex on center of disc, widened at middle where it is about $\frac{1}{2}$ width of pronotum at its widest point, with one or two longitudinal dark brown spots in center of plaga anteriorly, at sides 2 or 3 smaller rounded spots of whitish. Scutellum dark brown bordered with whitish. Elytra widest across humeri, length less than twice width across humeri, sides vertical, defined above by vague carinae from humeri to near apices, apices sinuate-truncate, short spine at outer angle, inner angle rounded; surface with scattered punctures bearing stiff erect dark setae, marked with coalescing maculae of dull whitish pubescence which are somewhat reduced on sides and interrupted by an irregular oblique dark area near side at basal third, and a larger, somewhat better defined transverse undulating dark fascia from margin to near suture behind middle. Body beneath whitish pubescent; abdominal sternites with lateral dark spots, terminal sternite 3 times as long as fourth, prolonged into a pair of long subparallel flattened obtuse processes, which are flexed downward, concave beneath, and separated by a deep emargination (Fig. 18); terminal tergite narrower than sternite, widely triangularly emarginate. Legs clothed with short dull whitish pubescence, femora with dark maculae just before apices; tibiae with base and apex dark; foretarsi fringed, first two segments white pubescent. Length 8-15mm.

FEMALE. Slightly more robust than male, legs slightly shorter, femora more slender, foretarsi without fringe; lower lobe of eye slightly shorter than gena, half as wide as frons; antennae more than $1\frac{1}{2}$ times as long as body; abdomen with terminal sternite $2\frac{1}{2}$ times as long as fourth, widely roundly emarginate, dentate at outer angles; terminal tergite rounded at apex, deeply triangularly notched, with vitta of white pubescence on middle. Length 10-16mm.

Holotype male, allotype (California Academy of Sciences), and 10 paratypes (3 males, 7 females) from MEXICO, Sinaloa, 15 miles N Mazatlán, 7,8-VIII-73 (E. Giesbert). 18 additional paratypes include: MEXICO: 3 males, 3 females, Sinaloa, 2 miles W Concordia, 14-VIII-70 (J. A. Chemsak); 1 male, 1 female, Sinaloa, Venedio (= El Venedillo, nr. Mazatlán), 23-VII-18 (Kusche); 1 female, Sinaloa, 2 miles SE Villa Union, 28-VIII-73 (E. Giesbert); 2 males, Sinaloa, Los Mayos, 24-VII-52 (J. D. Lattin); 1 female, Sinaloa, 21 miles E Villa Union, 25-VII-64 (H. F. Howden); 1 female, Sinaloa, 20.4 miles NE Villa Union, 13-VIII-63 (Byers & Naumann); 1 male, Sinaloa, 3.5 miles W Concordia, 29-VII-72 (J. & M. A. Chemsak, A. & M. Michelbacher); 1 male, Jalisco, 55 miles W Tequila, 28-VI-63 (J. Doyen); 1 male, 2 females, Nayarit, 4km NE San Blas, 5-7-X-76 (E. Giesbert & D. Skiles).

REMARKS: This species resembles *C. ramosa* and *C. leucophaea*, but males can be

immediately distinguished by the form of the terminal abdominal sternite (Fig. 18). In females of *C. sinaloensis* the terminal abdominal tergite is deeply notched, while it is deflexed and truncate in *C. leucophaea*, and shallowly notched in *C. ramosa*. Other differences include the more heavily marked elytra, with the most distinct dark area behind the middle, the small size of the lower eye lobe, and the range, which in the present species is limited to the central Pacific slope of Mexico.

COLOBOTHEA LEUCOPHAEA Bates
(Figs. 4, 20)

Colobothea leucophaea Bates, 1865, Ann. Mag. Nat. Hist., (3)XV, p. 223, nota; Bates, 1881, Biologia Centrali-Americana, Coleoptera 5:188.

MALE. Form moderately robust, convex, subcuneate, sides deflexed, integument dark reddish brown, clothed with minute piceous vestiture, scattered erect dark setae, and with pattern of whitish markings. Head with whitish pubescence reduced on vertex to a pair of posteriorly divergent vittae between eyes; lower lobe of eye $2\frac{1}{2}$ times as tall as gena, width subequal to frons; antennae nearly twice length of body, dark reddish brown, with ill-defined areas of whitish on bases of segments 3 to 11. Pronotum convex, widest behind middle, narrowed at base; surface dark brown pubescent, with a wide central whitish plaga from base to apex, more or less longitudinally divided in middle by dark spots or lineoles; one or two additional lineoles of whitish on each side. Scutellum dark brown margined with whitish. Elytra less than twice as long as width across humeri, sides vertical, defined above by obtuse carinae, apices transversely truncate, outer angle produced as short spine, inner angle rounded; surface piceous, marked with three transverse ill-defined areas of confluent whitish maculae, separated on each elytron by two irregular dark areas, one before, and one behind middle, the posterior being the larger and closer to the suture. Body beneath dull whitish pubescent, with dark maculae at sides of sternites; abdomen with terminal sternite abruptly flexed downward, produced at sides into a pair of large rounded flattened spatulate lobes set at an angle of 45° between vertical and horizontal (Fig. 20). Legs with foretarsi fringed, first two or three segments whitish pubescent. Length 8-13mm.

FEMALE. Slightly more robust than male, with femora more slender, antennae $1\frac{1}{2}$ times as long as body. Head with lower lobe of eye subequal to or slightly taller than gena, $\frac{3}{4}$ as wide as frons. Abdomen with terminal sternite 3 times length of fourth sternite, widely roundly emarginate, hind angles dentate; terminal tergite narrower than sternite, apex deflexed, truncate, with median longitudinal line of whitish pubescence. Legs with foretarsi not fringed. Length 8-13mm.

TYPE-LOCALITY: Mexico.

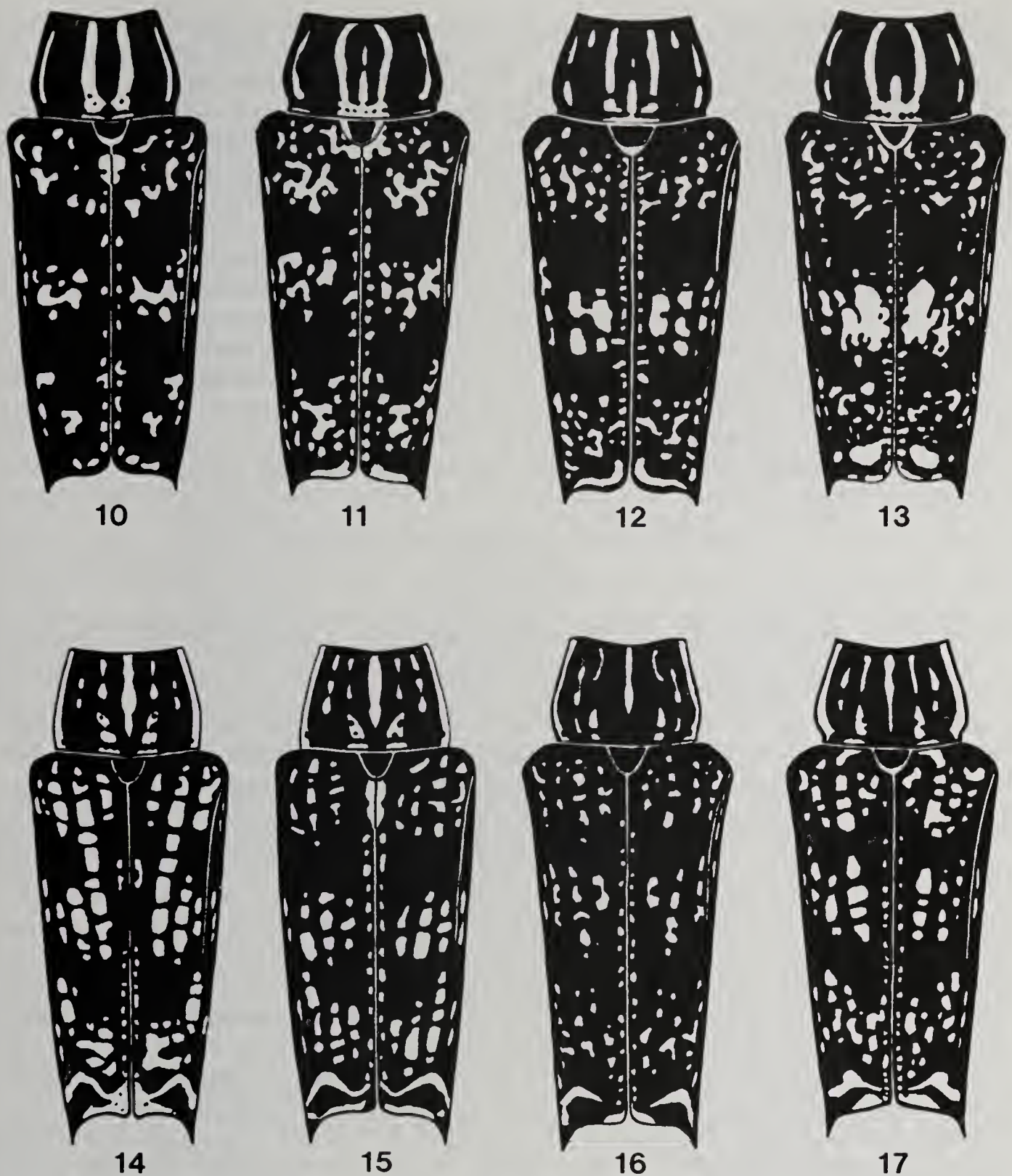
RANGE: Mexican states of Veracruz, Oaxaca, Colima, and Chiapas.

REMARKS: The very distinctive terminal abdominal sternite of the male, the truncate terminal abdominal tergite of the female, and the truncate, not sinuate-truncate, elytral apices will serve to separate this species from the closely related *C. ramosa* and *C. sinaloensis*. The markings of *C. leucophaea* vary from bluish white to yellowish white with no apparent geographical or populational basis.

COLOBOTHEA RAMOSA Bates
(Figs. 3, 19)

Colobothea ramosa Bates, 1872, Trans. Ent. Soc. Lond., 1872:225; Bates, 1881, Biologia Centrali-Americana, Coleoptera 5:187, pl. 14, fig. 12; *ibid.*, 1885:419; Chemsak & Linsley, 1970, Jour. Kansas Ent. Soc., 43:409 (lectotype).

MALE. Form moderately robust, convex, subcuneate, sides deflexed, integument piceous, clothed with minute blackish-brown vestiture, marked with whitish pubescence, and with scattered erect dark setae. Head with whitish pubescence reduced on



Figs. 10-17, Typical elytral and pronotal patterns of: 10, *Colobothea parcens* Bates; 11, *C. vidua* Bates; 12, *C. sexualis* Casey; 13, *C. chontalensis* Bates and *C. pleuralis* Casey; 14, *C. rincona* Giesbert; 15, *C. aleata* Bates; 16, *C. hebraica* Bates; 17, *C. hondurena* Giesbert.

vertex to a pair of posteriorly divergent vittae in middle between eyes; lower lobe of eye twice as tall as gena, width subequal to or smaller than frons; antennae approximately twice length of body, piceous, with ill-defined whitish annulae at bases of segments 3 to 11. Pronotum rounded, widest behind middle, slightly constricted at base, with a wide central whitish pubescent plaga from base to apex enclosing a central rounded macula, a centro-apical lineole, and sometimes a sub-basal transverse spot of piceous; laterally one or two whitish pubescent lineoles on each side. Scutellum piceous, edged with whitish. Elytra less than twice as long as width across humeri, sides vertical, defined above by obtuse carinae, apices sinuate-truncate, outer angle produced as a short spine, inner angle rounded; surface piceous, with whitish

pubescent coalescing maculae forming an irregular pattern along entire suture, which is sinuately widened to sides at humeri, postmedially, and on apical quarter, leaving two large more or less rounded areas of piceous on each elytron, one just before, and one behind middle; sides with whitish maculae much reduced. Body beneath extensively marked with dull whitish; abdomen with terminal sternite 3 times as long as fourth sternite, widely emarginate at apex, apical half deeply concave in center, sides divergently obtusely produced, entire apex fringed (Fig. 19). Legs with foretarsi fringed. Length 9-16mm.

FEMALE. Form slightly more robust than male, with femora more slender. Head with lower lobe of eye $1\frac{1}{2}$ times as tall as gena, more than $\frac{2}{3}$ as wide as frons; antennae more than $1\frac{1}{2}$ times as long as body. Abdomen with terminal sternite 4 times as long as fourth sternite, emarginate, dentate at hind angles; terminal tergite narrower than sternite, rounded at apex, with a shallow notch in middle, and a longitudinal central vitta of white pubescence. Length 11-15mm.

TYPE-LOCALITY: Chontales, Nicaragua.

RANGE: Mexico (Oaxaca, Yucatan, and Chiapas) to Nicaragua.

COLOBOTHEA GUATEMALENA Bates

(Figs. 5, 27)

Colobothea guatemalena Bates, 1881, *Biologia Centrali-Americana*, Coleoptera, 5:188; *ibid.*, 1885:419; Chemsak & Linsley 1970, *Jour. Kansas Ent. Soc.*, 43:409 (lectotype).

MALE. Form moderately robust, convex, subcuneate, integument dark reddish brown, clothed with minute silky brown pubescence and pattern of whitish pubescent markings. Head with a pair of whitish posteriorly divergent vittae on vertex between eyes; lower lobe of eye 3 to 4 times as tall as gena, wider than frons; antennae dark red brown, nearly twice length of body, with ill-defined whitish annulae on base of segments 5 to 11. Pronotum widest near base, sides slightly rounded; a wide whitish central plaga from base to apex, nearly divided in center by a narrow longitudinal dark line; at each side of disc a narrow broken longitudinal whitish line. Scutellum dark brown, bordered laterally with whitish. Elytra nearly twice as long as width across humeri, sides vertical, defined above by obtuse carinae, apices truncate, outer angles spinose, inner angle rounded; surface dark brown, with pattern of whitish spots and coalescing maculae concentrated into 3 indistinct transverse areas: one subhumeral, one median, and one on apical fifth; suture narrowly maculate, sides with whitish spots scattered. Body beneath heavily patterned with whitish pubescence; abdomen with terminal sternite 3 times as long as fourth sternite, flexed downward at apex, rounded, with outer angles produced as short blunt inwardly curved processes, entire apex fringed (Fig. 27). Length 8-12mm.

FEMALE. Slightly more robust than male, with femora more slender. Head with lower lobe of eye subequal in height to gena, slightly narrower than frons; antennae $1\frac{1}{2}$ times as long as body. Abdomen with terminal sternite $2\frac{1}{2}$ times length of fourth sternite, deeply emarginate at apex, hind angles dentate; terminal tergite narrower than sternite, roundly emarginate. Length 8-13mm.

TYPE-LOCALITY: El Reposo, Guatemala.

RANGE: Mexico (Veracruz, Oaxaca, and Chiapas) to Guatemala.

REMARKS: The male terminal abdominal sternite bears a close resemblance to the same structure in the otherwise quite distinct *C. chontalensis*.

COLOBOTHEA REGULARIS Bates

(Figs. 6, 22)

Colobothea regularis Bates, 1881, *Biologia Centrali-Americana*, Coleoptera 5:188.

MALE. Form moderately robust, convex, integument dark red brown, clothed with

minute brown vestiture, and marked with pattern of whitish pubescence. Head with a pair of posteriorly divergent whitish vittae on vertex between eyes; lower lobe of eye slightly taller than gena, narrower than frons; antennae twice length of body, reddish brown, ill-defined oblique white annulae at base of all segments but 7 and 9. Pronotum widest behind middle, marked on disc with a pair of subparallel whitish vittae curving slightly together at base and apex, connected transversely near base; a subentire longitudinal line laterally on each side, and sometimes a median lineole between discal and lateral lines. Scutellum brown with white pubescent border. Elytra twice as long as width across humeri, sides vertical, defined above by carinae from humeri to near the obliquely sinuate-truncate apices, which are angled forward from suture, outer angles spinose; whitish pubescent pattern restricted to four distinct irregular wide transverse fasciae connected along suture and angled forward: one subhumeral not reaching margin, one postmedian to margin, one subapical to margin, and one on apex; all but apical band heavily spotted with brown; areas between fasciae free of white maculae. Body beneath mostly white pubescent; abdomen with terminal sternite more than twice length of fourth sternite, tapering, rounded externally, flattened and downturned toward apex, with a deeply U-shaped emargination, leaving a pair of long flat pointed processes (Fig. 22); terminal tergite triangularly notched. Length 11-14mm.

FEMALE. Slightly more robust than male, with femora more slender. Head with lower lobe of eye subequal to or slightly taller than gena, narrower than frons; antennae $1\frac{1}{2}$ times as long as body. Abdomen with terminal sternite 3 times as long as fourth sternite, tapering, apex emarginate, hind angles dentate; terminal tergite rounded, with deep triangular notch, white pubescent on center. Length 11-14mm.

TYPE-LOCALITY: Cordova, Mexico.

RANGE: East-central Mexico from San Luis Potosi to Veracruz.

REMARKS: This species can be easily separated from other members of the genus by the defined, fasciate elytral pattern, the oblique truncature of the elytral apices, and by the terminal abdominal characteristics.

COLOBOTHEA UNILINEATA Bates

(Figs. 7, 32)

Colobotha unilineata Bates, 1872, Trans. Ent. Soc. Lond., 1872:225; Bates, 1881, Biologia Centrali-Americana, Coleoptera 5:189, pl. 14, fig. 14; Chemsak & Linsley, 1970, Jour. Kansas Ent. Soc., 43:409 (lectotype).

MALE. Form moderate sized, convex, laterally compressed, integument piceous to dark brown, clothed with minute dark brown vestiture and pattern of white markings. Head with white pubescence limited on vertex to a single longitudinal vitta between eyes; lower lobe of eye subequal in height to gena, narrower than frons; antennae twice length of body, piceous, with ill-defined white annulae at bases of segments 3, 4, 5, 6, 8, and 10. Pronotum widest at base, which is nearly as wide as elytra at humeri, tapering slightly to apex; disc marked with a pair of slightly flexuous white vittae tapering slightly from subbasal sulcus to just short of apex; on each side a short antemedian lineole midway between discal vitta and a wide lateral stripe which tapers slightly from base to apex. Scutellum piceous, notched at apex, with small basal white patch. Elytra twice as long as width across humeri, sides vertical, defined above by obtuse carinae, nearly straight, tapering to truncate apices with spinose outer angles; surface piceous, with scattered short black setae, marked with whitish maculae in three ill-defined transverse areas: one subhumeral, widely connected on suture to a second median area that reaches margin, narrowly connected by small spots along suture to a third, preapical area angled forward from suture; apices with transverse white fasciae. Body beneath mostly white pubescent laterally; terminal sternite more than twice as long as fourth sternite, tapering to emarginate apex with hind angles dentate (Fig. 32). Legs with foretarsi fringed. Length 8-11.5mm.

FEMALE. Slightly more robust than male, with sides more nearly parallel, legs



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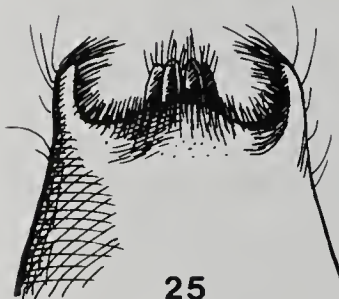
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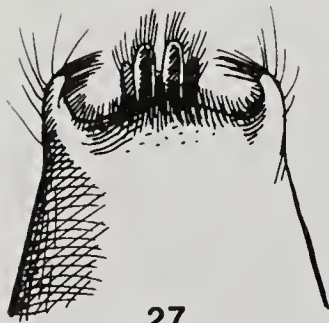
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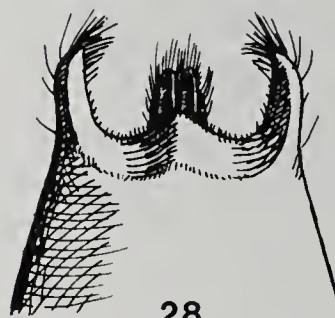
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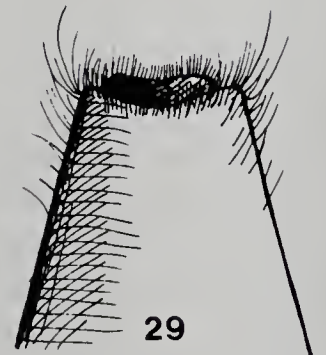
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Figs. 18-32, Typical male terminal abdominal sternites of: 18, *Colobothea sinaloensis* Giesbert; 19, *C. ramosa* Bates; 20, *C. leucophaea* Bates; 21, *C. dispersa* Bates; 22, *C. regularis* Bates; 23, *C. parcens* Bates; 24, *C. vidua* Bates; 25, *C. chontalensis* Bates; 26, *C. pleuralis* Casey; 27, *C. guatemalena* Bates; 28, *C. sexualis* Casey; 29, *C. hebraica* Bates and *C. aleata* Bates; 30, *C. rincona* Giesbert; 31, *C. hondurena* Giesbert; 32, *C. unilineata* Bates and *C. fasciatipennis* Linsley.

slightly shorter with femora more slender. Head with lower lobe of eye taller than gena, narrower than frons; antennae more than 1½ times as long as body. Abdomen with terminal sternite similar to that of male. Legs with foretarsi not fringed. Length 9-11.5mm.

TYPE-LOCALITY: Chontales, Nicaragua.

RANGE: Nicaragua to Canal Zone, Panama.

REMARKS: The single line on the vertex of the head will separate this species from all others in this study except the closely related *C. fasciatipennis*, from which it can be easily separated by the pronotal and elytral markings. In *C. unilineata*, unlike most other species in this study, the external abdominal characters are of little use in determining gender. Several specimens collected by F. Nevermann in Limón Province, Costa Rica bear the following host record: "Ex. dry twigs *Ficus* sp. & *Lecythia costaricense*, June-Aug."

COLOBOTHEA FASCIATIPENNIS Linsley (new status)

(Figs. 8, 32)

Colobothea unilineata fasciatipennis Linsley, 1935, Stylops, (4)5:112.

MALE. Form moderate sized, convex, laterally compressed, integument piceous, clothed with dark brown vestiture and pattern of whitish markings. Head with white pubescence limited on vertex to a single longitudinal vitta between eyes; lower lobe of eye subequal in height to gena, narrower than frons; antennae twice as long as body, piceous, oblique white annulae on inside of bases of segments 3, 4, 5, 6, 8, and 10. Pronotum widest at base, where it is nearly as wide as elytra, tapering slightly to apex; marked on disc with 6 broad whitish longitudinal vittae tapering from base to near apex, and a small white lineole on center. Scutellum piceous, notched at apex, with white pubescence at base and apex. Elytra twice as long as width across humeri, sides vertical, defined above by obtuse carinae, nearly straight, tapering to truncate apices with spinose outer angles; surface piceous, with scattered short black setae, marked with whitish maculae on basal and apical quarters, and with a large longitudinally oblong irregular macula in middle of each elytron and several oblique maculae in middle of sides; apices with transverse white fasciae. Body beneath mostly white pubescent laterally; terminal sternite more than twice as long as fourth sternite, tapering, emarginate at apex, with hind angles dentate. Legs with foretarsi fringed. Length 10-11mm.

ORIGINAL DESCRIPTION OF FEMALE: "Reddish brown, clothed with short, white and brown recumbent pubescence, with scattered erect black setae on the elytra. Head with a single line of white pubescence on the vertex; antennae slender, segments annulated at base with white. Pronotum with eight parallel, white, longitudinal vittae, of which the discal and two lateral pairs are very broad. Elytral white spots concentrated in basal, median, and subapical areas, with the median spots condensed on each elytra into a conspicuous fascia; apices truncate, the outer angle spiniform. Last dorsal segment of the female elongate, slender, gradually narrowed toward apex which is feebly emarginate. Length 9.5-10mm., breadth 3-3.3mm."

TYPE-LOCALITY: Ciricito, Canal Zone.

REMARKS: Only the extent of the white markings will separate this species from *C. unilineata*, and Linsley described this form as a subspecies, based on two female specimens from Canal Zone. Only two examples, both males, have been seen in this study, from Arraijan, and Gamboa, Canal Zone. A number of specimens of *C. unilineata* have been seen from several localities in the Canal Zone, and the apparent sympatry with that species suggests that full species status is warranted for the closely related *C. fasciatipennis*.

COLOBOTHEA DISPERSA Bates

(Figs. 9, 21)

Colobothea dispersa Bates, 1872, Trans. Ent. Soc. Lond., 1872:226; Bates,

1881, *Biologia Centrali-Americana*, Coleoptera, 5:189, pl. 14, Fig. 15; Chemsak & Linsley, 1970, *Jour. Kansas Ent. Soc.*, 43:409 (lectotype).

MALE. Form moderately robust, convex, integument piceous, clothed with minute dark brown vestiture and pattern of white markings. Head with a pair of posteriorly divergent white vittae on vertex between eyes; lower lobe of eye $2\frac{1}{2}$ times as tall as gena, half again as wide as frons; antennae twice length of body, piceous, obliquely white annulate at bases of segments 4, 5, 6, 8, 10, and 11. Pronotum with sides scarcely rounded, widest at base, tapering to apex; marked with 4 widely spaced white longitudinal discal vittae extending from base nearly to apex, middle pair separated by about $\frac{1}{3}$ of pronotal width, another on each side visible from above. Scutellum piceous, usually unmarked, but sometimes with spot of white at apex. Elytra twice as long as width across humeri, sides vertical, defined above by obtuse carinae, apices truncate, outer angle spinose; surface piceous, with scattered erect black setae; pattern of white maculae primarily on basal half and at apical third, some subrectangular in longitudinal lines, smaller spots on sides and along suture, inner angles of apices with white maculae. Body beneath broadly white pubescent laterally; abdomen with terminal sternite more than twice as long as fourth sternite, apex concave, deeply triangularly emarginate, produced at apex as a pair of long, straight, stout, obtuse processes, entire apex fringed (Fig. 21). Length 7-13mm.

FEMALE. Slightly more robust than male, with femora shorter and more slender. Head with lower lobe of eye $1\frac{1}{2}$ times as tall as gena, width subequal to frons; antennae more than $1\frac{1}{2}$ times as long as body. Abdomen with terminal sternite 3 times length of fourth sternite, tapering, apex emarginate, dentate at hind angles, fringed; terminal tergite narrow, apex concave, slightly notched and fringed. Length 10-16mm.

TYPE-LOCALITY: Chontales, Nicaragua.

RANGE: Nicaragua to Panama.

REMARKS: This species can be separated by the pronotal form and markings, the large lower eye lobes, and the form of the abdominal terminus.

COLOBOTHEA PARCENS Bates

(Figs. 10, 23)

Colobothea parcens Bates, 1881, *Biologia Centrali-Americana*, Coleoptera, 5:189; Chemsak & Linsley 1970, *Jour. Kansas Ent. Soc.*, 43:409 (lectotype).

MALE. Form moderate sized, convex, integument piceous, clothed with minute brown vestiture, and pattern of white pubescent markings. Head with a pair of posteriorly divergent white vittae on vertex between eyes; lower lobe of eye subequal in height to gena, narrower than frons; antennae twice length of body, piceous, oblique white annulae at bases of segments 4, 5, 6, 8, 10, and 11. Pronotum widest behind middle, marked on disc with a pair of nearly parallel white vittae which are transversely connected at base, and a slender white vitta at lateral margin of disc on each side not reaching base or apex. Scutellum piceous, white pubescent at apex. Elytra twice as long as width across humeri; sides vertical, defined above by obtuse carinae, nearly straight, tapering feebly to truncate apices with outer angles spinose, inner angles rounded; surface piceous, with scattered erect black setae, marked on disc with white maculae in basal, median, and preapical areas, and scattered along suture. Body beneath with white pubescence heaviest laterally from prosternum to abdomen; abdomen with terminal sternite $2\frac{1}{2}$ times as long as fourth sternite, tapering to deeply roundly emarginate apex with hind angles obtusely produced, entire apex fringed (Fig. 22); terminal tergite short, rounded, widely notched in middle. Length 10-14mm.

FEMALE. Slightly more robust than male, with legs slightly shorter and more slender. Head with lower lobe of eye subequal in height to gena, much narrower than frons; antennae more than $1\frac{1}{2}$ times as long as body. Abdomen with terminal sternite 3 times as long as fourth sternite, tapering, apex truncate to feebly emarginate, hind

angles dentate; terminal tergite narrower than sternite, apex rounded with distinct notch in middle, white pubescent vitta on center. Length 8.5-13mm.

TYPE-LOCALITY: Cordova, Mexico.

RANGE: Mexico (Veracruz and Oaxaca) to Belize (British Honduras).

REMARKS: *C. parcens* may be separated from other species in the genus on the basis of the terminal abdominal segments in both sexes, and from many of its closest congeners by the shortness of the lower eye lobe in the male, and by the lack of any central marking between the paired vittae in the center of the pronotal disc.

COLOBOTHEA VIDUA Bates

(Figs. 11, 24)

Colobothea vidua Bates, 1865, Ann. Mag. Nat. Hist., (3)15:224, nota; Bates, 1881, Biologia Centrali-Americana, Coleoptera 5:188.

MALE. Form moderately robust, convex, integument piceous, clothed with minute brown vestiture and pattern of white pubescent markings. Head with white pubescence reduced on vertex to a pair of posteriorly divergent vittae between eyes; lower lobe of eye about 3 times as tall as gena, distinctly wider than frons; antennae less than twice length of body, piceous to brown, white pubescence obliquely at bases of segments 5, 6, 8, 10, and on basal half of 11. Pronotum convex, somewhat rounded, widest behind middle; marked on disc with a curved subentire white vitta on each side of middle, transversely connected at base, a basal longitudinal lineole between these in middle, and on each side of disc a sometimes broken curved longitudinal line reaching neither base nor apex. Scutellum piceous, fringed with white at sides. Elytra twice as long as width across humeri, sides vertical, defined above by obtuse carinae, tapering slightly to truncate apices with outer angles spinose, inner angles rounded; surface piceous brown, with scattered erect black setae, with pattern of white maculae scattered in 3 indistinct transverse areas: subbasal, median, and preapical, and small spots along suture, apices transversely whitish except on spines. Body beneath with broad white lateral stripe from prothorax to near end of abdomen; abdomen with terminal sternite flexed downward at apex, which is broad, truncate, slightly convex, with hind angles produced as a pair of incurved tufted processes (Fig. 24), Length 9-11mm.

FEMALE. Slightly more robust than male, legs somewhat shorter with femora more slender. Head with lower lobe of eye slightly taller than gena, slightly narrower than frons; antennae more than 1½ times as long as body. Abdomen with terminal sternite 3 to 4 times as long as fourth sternite, narrowed at apex, which is emarginate with hind angles dentate to spiniform; terminal tergite narrower than sternite, apex subtruncate to feebly emarginate, concave, white pubescent. Length 9-13mm.

TYPE-LOCALITY: Mexico.

RANGE: Mexico (Veracruz) to Honduras.

REMARKS: This species which, with *C. chontalensis*, *C. pleuralis*, and *C. sexualis*, forms a closely related group, is one of the earliest described from the area of this study, and the original description (Bates 1865) is insufficient to separate *C. vidua* from other members of its group. A photograph of a specimen from the Bates material in the British Museum, dorsal view only, has been examined, and it appears that series of specimens collected by the author at one location in Veracruz, Mexico, and another in northern Honduras, are the only examples of this species in the large amount of material examined. The equality of the maculations in the three transverse discal areas of the elytra will separate *C. vidua* from the other members of this group, as will the wider lower eye lobe of the males. The male terminal sternite is similar to that of *C. chontalensis*, but differs from *C. sexualis* and *C. pleuralis*. In most cases the scutellum of *C. vidua* is bordered at the sides with white, while, again in most cases, *C. chontalensis* and *C. pleuralis* have the entire scutellum white bordered, and *C. sexualis* has only the apex white. Minor differences in the pronotal markings are too variable to be useful.

COLOBOTHEA SEXUALIS Casey
(Figs. 12, 28)

Colobothea sexualis Casey, 1913, *Memoirs on the Coleoptera*, 4:344.

MALE. Form moderately robust, convex, integument piceous to dark red brown, clothed with minute brown vestiture, and pattern of white pubescent markings. Head with white pubescence reduced on vertex to a pair of posteriorly divergent vittae between eyes; lower lobe of eye 2 or more times as tall as gena, subequal in width to frons; antennae nearly twice length of body, piceous to red brown, indistinctly obliquely white annulate at bases of segments 6, 8, 10, and 11. Pronotum rounded, widest behind middle; marked on disc with a curved subentire white vitta on each side of middle, transversely joined at base, enclosing a lineole or spots in middle which are often connected to base; three lineoles on each side of disc, two in a longitudinal row at side, and one near apex between lateral lineoles and discal vitta. Scutellum piceous to brown, white pubescent at apex. Elytra nearly twice as long as width across humeri, sides vertical, defined above by obtuse carinae, and tapering slightly to truncate apices which are spinose at outer angles, rounded at inner angles; surface piceous to brown, with scattered erect dark setae, and pattern of white maculae scattered in 3 indistinct transverse areas: subbasal, median, and preapical, with small spots along suture, median markings larger than others on disc, and lacking large round maculae just above inner apical angle; transverse undulating fascia of white at apices. Body beneath with broad white lateral stripe from prothorax to near end of abdomen; abdomen with terminal sternite broad, flexed downward, double-emarginate at apex, with middle obtusely pointed, not heavily fringed, outer angles produced as a pair of flattened tufted processes (Fig. 28). Length 8-12mm.

FEMALE: Slightly more robust than male, legs slightly shorter with femora more slender. Abdomen with terminal sternite 3 to 4 times as long as fourth sternite, narrowed to emarginate apex, hind angles spiniform; terminal tergite narrower than sternite, apex truncate, flexed downward, white pubescence concentrated longitudinally in middle. Length 10-14mm.

TYPE-LOCALITY: Honduras.

RANGE: Mexico (Chiapas) to Honduras.

REMARKS: The abdominal termini of both sexes are distinct, as is the white tipped scutellum. The median area of maculations on the elytral disc is more heavily marked than in *C. vidua*, and less heavily marked than in *C. chontalensis* and *C. pleuralis*. Casey (1913) refers in his description of the female to the "long stiff spiniform setae" at the abdominal apex. These setae, while present, are quite variable, and appear to some degree in the other species of this group.

COLOBOTHEA CHONTALENSIS Bates
(Fig. 13)

Colobothea chontalensis Bates, 1872, *Trans. Ent. Soc. Lond.*, 1872:225; Bates, 1881, *Biologia Centrali-Americana*, *Coleoptera*, 5:188, pl. 14, fig. 11; *ibid.*, 1885:420; Linsley, 1935, *Stylops*, (4)5:113; Chemsak & Linsley, 1970, *Jour. Kansas Ent. Soc.*, 43:409 (lectotype).

MALE. Form moderately robust, convex, integument piceous to dark reddish brown, clothed with minute brown vestiture, and pattern of white pubescent markings. Head with white pubescence reduced on vertex to a pair of posteriorly divergent vittae between eyes; lower lobe of eye more than 2½ times as tall as gena, width subequal to or slightly wider than frons; antennae nearly twice length of body, piceous to red brown, indistinct oblique white annulae at bases of segments 3, 4, 5, 6, 8, 10, and 11. Pronotum rounded, widest behind middle; marked on disc with a curved subentire white vitta on each side of middle transversely joined at base, enclosing a basally connected lineole or spots in middle; on each side of disc an often broken curved longitudinal line usually reaching neither base nor apex. Scutellum piceous

to dark red brown, entire margin narrowly white pubescent. Elytra twice as long as width across humeri, sides vertical, defined above by obtuse carinae, tapering slightly to truncate apices with outer angle spinose, inner angle rounded; surface piceous to dark reddish brown, with scattered punctures bearing short erect black setae, and pattern of white maculae scattered in three indistinct transverse areas: subbasal, median, and preapical, with small spots along suture, median area containing a large unevenly oblong macula on each side of suture, preapical area containing a moderately large round macula above each inner apical angle. Body beneath with broad white lateral stripe from prothorax to near end of abdomen; abdomen with terminal sternite flexed downward, apex broad, truncate, slightly convex, with hind angles produced as a pair of tufted processes (Fig. 25). Length 7-12mm.

FEMALE: Slightly more robust than male, legs slightly shorter with femora more slender. Head with lower lobe of eye slightly taller than gena, slightly narrower than frons; antennae more than $1\frac{1}{2}$ times as long as body. Abdomen with terminal sternite 3 to 4 times as long as fourth sternite, narrowed to apex, which is emarginate with hind angles spiniform; terminal tergite narrower than sternite, apex feebly emarginate and bilobed, with white pubescence concentrated laterally. Length 9-14mm.

TYPE-LOCALITY: Chontales, Nicaragua.

RANGE: Caribbean slope of Nicaragua and Costa Rica.

REMARKS: Bates (1872) describes this species as being black, but many specimens tend to be dark reddish brown. The elytral pattern differs slightly from other members of this group, with the exception of *C. pleuralis*. The females can also be separated from others in the group by the distribution of the pubescence on, as well as the form of, the terminal tergite, again with the exception of *C. pleuralis*. No reliable structural or marking differences can be found to separate females of *C. chontalensis* and *C. pleuralis*; the males, however, are quite distinct in the form of the abdominal termini.

COLOBOTHEA PLEURALIS Casey (Figs. 13, 26)

Colobothea pleuralis Casey, 1913, Memoirs on the Coleoptera, 4:344.

MALE. Form moderately robust, convex, integument piceous to dark brown, clothed with minute brown vestiture, and pattern of white pubescent markings. Head with white pubescence reduced on vertex to a pair of posteriorly diverging vittae between eyes; lower lobe of eye more than twice as tall as gena, subequal to or slightly narrower than frons; antennae nearly twice as long as body, piceous to dark brown, white pubescence at bases of segments 3, 4, 5, 6, 8, 10, and 11. Pronotum rounded, widest behind middle; marked on disc with a curved white vitta on each side of middle transversely joined across base, and enclosing basally connected short lineole or spots in middle; on each side of disc subentire or broken curved line not usually reaching base or apex. Scutellum with entire margin narrowly white pubescent. Elytra twice as long as width across humeri, sides vertical, defined above by obtuse carinae, tapering slightly to truncate apices with outer angle spinose, inner angle rounded; surface piceous to dark brown, with scattered punctures bearing short erect black setae, and pattern of white maculae in 3 indistinct transverse areas: subbasal, median, and preapical, with small spots along suture, a large unevenly oblong macula in middle on each side of suture, and a moderately large rounded macula above each inner apical angle. Body beneath broadly white laterally; abdomen with terminal sternite flexed downward, broadly truncate at apex, with hind angles produced as two very short blunt tufted processes, entire apex fringed (Fig. 26). Length 8-13mm.

FEMALE. Slightly more robust than male, legs slightly shorter with femora more slender. Head with lower lobe of eye slightly taller than gena, distinctly narrower than frons; antennae more than $1\frac{1}{2}$ times as long as body. Abdomen with terminal sternite 3 to 4 times as long as fourth sternite, tapering to apex, which is emarginate with hind angles spiniform, terminal tergite narrower than sternite, apex feebly emarginate and bilobed, with white pubescence concentrated laterally. Length 9-14mm.

TYPE-LOCALITY: Darien, Panama.

RANGE: Pacific slope of Costa Rica to Panama.

REMARKS: This species is extremely close to *C. chontalensis*, the only apparent constant difference being in the form of the male terminal sternite. The "styliform processes" referred to by Casey (1913) in his description of the male abdomen are not external structures, but parameres, which, with the sheath are often incompletely withdrawn in this and other species of *Colobothea*.

COLOBOTHEA RINCONA Giesbert, **new species**
(Figs. 14, 30)

MALE. Form moderate sized, convex, subcuneate, integument piceous, clothed with minute dark brown vestiture and pattern of white pubescent markings. Head sparsely finely punctate; white pubescence reduced on vertex to a pair of posteriorly divergent vittae between eyes; lower lobe of eye nearly twice as tall as gena, width nearly twice that of frons; antennae less than twice as long as body, piceous, scape and basal segments with thin white pubescence, broad oblique ill-defined white annulae on basal third of segments 4, 5, 6, 8, 10, and 11. Pronotum convex, nearly cylindrical but slightly wider at base; marked with white as follows: on disc a central irregular vitta reaching apex but not base, an irregular vitta broken into a series of spots and lineoles on either side of middle, widest at base, where they are separated by about the width of the central vitta, between these and the sides another short series of spots sometimes attaining apex but not base, and just below lateral margin of disc a broad stripe from base at humerus to apex, and continued on head to lower lobe of eye. Scutellum piceous, not usually marked distinctly with white. Elytra more than twice as long as width across humeri, sides vertical, nearly straight, defined above by distinct carinae, tapering slightly to emarginate apices, with outer angles armed with a stout sharp spine, inner angles angulate; surface piceous, with scattered punctures bearing erect dark setae, and marked with white maculae, some of which are rectangular, sometimes longitudinally sublinearly arranged, vaguely concentrated on disc into subbasal, median, and preapical areas, and with a thin white transverse anteriorly angulate fascia on each elytron just before apex, and apices infuscated with white. Body beneath with white stripe on each side just below lateral stripe on prothorax, on episterna, and at sides of abdominal sternites, lightly white pubescent medially; abdomen with terminal sternite $2\frac{1}{2}$ times as long as fourth sternite, apex rounded with edge flexed upward (Fig. 30). Legs piceous, lightly white pubescent, with dark subapical maculae on femora; tarsi white pubescent on upper side. Length 11-14mm.

FEMALE. Slightly more robust than male, legs slightly shorter with femora more slender. Head with lower lobe of eye distinctly taller than gena, wider than frons; antennae $1\frac{1}{2}$ times as long as body. Abdomen with terminal sternite 3 times as long as fourth sternite, tapering to emarginate apex with dentate outer angles; terminal tergite narrower than sternite, apex rounded, slightly depressed, white pubescent laterally. Length 11-15mm.

Holotype male, allotype (California Academy of Sciences) and 28 paratypes (9 males, 19 females) from COSTA RICA, Puntarenas, Rincon (Peninsula de Osa), 25-28-V-74 (E. Giesbert). One additional paratype from COSTA RICA, Cartago, Turrialba, 29-31-V-74 (E. Giesbert).

REMARKS: This species is close to *C. aleata*, but can be easily separated by the wide lower eye lobes of both sexes, the lack of white postscutellar sutural lineoles on the elytra, and the emarginate elytral apices. In addition, the male terminal sternite is rounded, not emarginate at the apex.

COLOBOTHEA ALEATA Bates
(Figs. 15, 29)

Colobothea aleata Bates, 1885, *Biologia Centrali-Americana*, Coleoptera,

5:420, pl. 25, Fig. 10; Chemsak & Linsley, 1970, Jour. Kansas Ent. Soc., 43:409 (lectotype).

MALE. Form moderate sized, nearly parallel sided, integument piceous to dark brown, clothed with minute dark brown vestiture and pattern of white markings. Head with a pair of posteriorly diverging white vittae on vertex between eyes; lower lobe of eye slightly taller than gena, width subequal to frons; antennae less than twice length of body, piceous to dark brown, with oblique ill-defined white areas at bases of segments 4, 5, 6, 8, 10 and 11. Pronotum slightly rounded, nearly cylindrical but slightly wider at base; marked with white on disc as follows: a central irregular vitta from about basal third to apex, a linear series of spots and lineoles on either side of middle, which are widened at base, and separated there by about the width of the central vitta, between these and sides a shorter series of spots or lineoles on apical 2/3; just below lateral margin of disc a broad stripe from base at humerus to apex, and continued on head to lower lobe of eye. Scutellum piceous, usually unmarked. Elytra more than twice as long as width across humeri, sides vertical, nearly straight, defined above by distinct carinae, nearly parallel but narrowing slightly to transversely truncate apices, with outer angles stoutly spined, inner angle feebly rounded; surface piceous to dark brown, with scattered punctures bearing erect black setae, and marked with white maculae, some of which are subrectangular and in part longitudinally sublinearly arranged, concentrated on disc in subhumeral, median, and preapical areas, and along suture, with a longitudinal sutural lineole just behind scutellum, and a thin transverse anteriorly angulate fascia on each elytron just before the white infusate apex. Body beneath with wide white stripe laterally; abdomen with terminal sternite twice as long as fourth sternite, tapering to a slightly emarginate and fringed apex (Fig. 29); terminal tergite feebly emarginate. Length 10-12mm.

FEMALE. More robust than male, legs slightly shorter with femora more slender. Head with lower lobe of eye subequal to or shorter than gena, narrower than frons; antennae more than 1½ times as long as body. Abdomen with terminal sternite 2½ times as long as fourth sternite, tapering, apex emarginate, outer angles dentate; terminal tergite narrower than sternite, apex rounded to subtruncate, white pubescent at sides. Length 11-16mm.

TYPE-LOCALITY: Volcan de Chiriquí, Panama.

RANGE: Nicaragua to Panama.

REMARKS: In the group of closely related species formed by *C. rincona*, *C. hebraica*, *C. hondurena*, and the present species, the pronotal pattern is distinguished by the central vitta which is apical rather than basal in its orientation. The approximate pair of basal maculae on the pronotum will separate *C. rincona* and *C. aleata*, and the postscutellar sutural mark will then separate *C. aleata*, as will the form of the male abdominal apex.

COLOBOTHEA HEBRAICA Bates

(Figs. 16, 29)

Colobothea hebraica Bates, 1865, Ann. Mag. Nat. Hist., (3)16:108, nota; Bates, 1872, Trans. Ent. Soc. Lond., 1872:225; Bates, 1881, Biologia Centrali-Americana, Coleoptera, 5:189, pl. 14, Fig. 13.

MALE. Form moderate sized, subcuneate, integument piceous, clothed with minute dark brown vestiture and pattern of white markings. Head with white pubescence on vertex, if present, limited to a pair of posteriorly divergent vittae between eyes; lower lobe of eye approximately equal in height to gena, and in width to frons; antennae less than twice length of body, piceous, bases of segments often obliquely marked with white. Pronotum convex, subcylindrical or slightly rounded and widest at or near base; marked with white as follows: a central vitta on apical half, a pair of broken maculae at base separated by about 1/3 of basal pronotal width, a pair of slightly flexed lines on apical third either side of middle, a series of longitudinal lineoles on each side near discal margin, and a wide lateral stripe on each side from

base to apex. Scutellum piceous, sometimes feebly marked with white on margin. Elytra twice as long as width across slightly produced and elevated humeri, sides vertical, nearly straight, defined above by distinct carinae, tapering to transversely truncate apices, which are armed at the outer angles with a stout sharp spine; marked with small white maculae scattered in subhumeral, median, and preapical areas, and small white spots on apical $\frac{3}{4}$ of suture, with a transverse anteriorly angulate white fascia on each elytron just before apex, which is white on inner angle. Body beneath white pubescent laterally; abdomen with terminal sternite $2\frac{1}{2}$ times as long as fourth sternite, tapering to emarginate apex, fringed (Fig. 29); terminal tergite subtruncate, marked with white laterally. Legs with femora clavate. Length 13-19mm.

FEMALE. More robust and somewhat less cuneate than male, legs slightly shorter with femora more slender. Head with lower lobe of eye a little shorter than gena, narrower than frons; antennae $1\frac{1}{2}$ times as long as body. Abdomen with terminal sternite $2\frac{1}{2}$ times as long as fourth sternite, tapering, emarginate at apex, fringed, with hind angles dentate; terminal tergite rounded to subtruncate, white pubescent laterally. Length 10-19mm.

TYPE-LOCALITY: Mexico.

RANGE: Mexico (Veracruz, Oaxaca, Chiapas, and Quintana Roo) to Guatemala and Belize (British Honduras).

REMARKS: Typical *C. hebraica* appear to be more cuneate, especially in the case of males, than the other species in this group, due to the somewhat more produced humeri. The markings are also moderately reduced.

COLOBOTHEA HONDURENA Giesbert, **new species** (Figs. 17, 31)

MALE. Form moderate sized, convex, integument piceous, clothed with minute dark brown vestiture and pattern of whitish markings. Head with a pair of whitish posteriorly divergent vittae on vertex between eyes; lower lobe of eye $1\frac{1}{2}$ times as tall as gena, $\frac{1}{3}$ wider than frons; antennae less than twice as long as body, piceous, white pubescence on bases of segments reduced on segments 7 and 9. Pronotum convex, rounded, widest near base; pattern of whitish markings as follows: a central vitta on apical half not reaching base, a broken apically pointed macula on each side of base, separated by about $\frac{1}{3}$ basal width of pronotum, in line with a short vitta on each side of middle apically, two short lineoles on each side near discal margin, and a wide lateral stripe on each side from base to apex, continuing forward on head to lower eye lobe. Scutellum piceous, sometimes lightly tipped with whitish. Elytra twice as long as width across humeri, which are feebly produced and elevated, sides vertical, defined above by distinct carinae, tapering to transversely truncate apices, outer angle armed with a stout spine; surface piceous, with scattered punctures bearing erect dark setae, marked with whitish spots and maculae, in part sublinearly arranged, concentrated in subbasal, median, and preapical areas, suture with small white spots along apical $\frac{2}{3}$, and a transverse sinuate fascia just before apex and apical edge near suture white. Body beneath with white pubescence heaviest laterally; abdomen with third sternite slightly, and fourth sternite more heavily punctate in middle, punctures bearing subrecumbent setae; terminal sternite twice as long as fourth sternite, broadly rounded, ventral surface with wide concavity clothed with recumbent setae, apex emarginate (Fig. 31); terminal tergite longer than sternite, narrowly truncate, white pubescent. Legs finely white pubescent, with dark maculae just before femoral apices, dark annulae on hind tibiae, tarsi white pubescent, less so on fourth segment. Length 8-12mm.

FEMALE. Slightly more robust than male, legs slightly shorter with femora more slender. Head with lower lobe of eye slightly taller than gena, wider than frons; antennae more than $1\frac{1}{2}$ times as long as body. Abdomen with terminal sternite $2\frac{1}{2}$ times as long as fourth sternite, tapering, triangularly emarginate, fringed, with hind angles dentate; terminal tergite with apex bilobed, impressed in middle, evenly white pubescent. Length 8.5-12mm.

Holotype male, allotype (California Academy of Sciences), and 5 paratypes (4 males, 1 female) from HONDURAS, Dept. Yoro, 45km S Tela, 800m altitude, 25-27-V-78 (E. Giesbert).

REMARKS: This species appears to form a connection between *C. hebraica* and *C. aleata*, but can be easily separated by the punctures and recumbent setae on the third and fourth sternites and unique terminal sternite of the male abdomen. Females can be separated by the structure and evenly distributed white pubescence of the terminal tergite. In *C. hebraica*, *C. aleata* and *C. rincona* this pubescence is concentrated laterally.

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A NEW HOST RECORD FOR *CALLOSOBRUCHUS CHINENSIS* (L.)
(COLEOPTERA: BRUCHIDAE)

Callosobruchus chinensis (L.) is a cosmopolitan bruchid associated with the seeds of a number of species of leguminous plants, many of which are of economic importance. Except for one unsupported literature record of *Malvus* sp., all previously known hosts are leguminous.

In June, 1977, *C. chinensis* was intercepted by customs inspectors at the Los Angeles International Airport in lotus seeds (*Nelumbo nucifera* Gaertn.) (Nymphaeaceae). This is a new family host record not only for *C. chinensis* but also for Bruchidae.

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